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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,810	04/16/2004	Yonggang Jin	27-012	8695

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EXAMINER

EDMONDSON, LYNNE RENEE

ART UNIT PAPER NUMBER

1725

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/825,810

Applicant(s)

JIN ET AL

Examiner

Lynne Edmondson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 1/9/06.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. The term "system" renders the claims indefinite. The term system can mean a variety of things including but not limited to both methods and apparatus. The claims appear to be written as apparatus or device but are argued as method (1-10) and apparatus (11-20) claims both using the term system. It is not clear which claims are intended to cover the method and which are to cover the apparatus. Clarification is required to determine the scope of the claims. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 5-8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Schmatz et al. (USPN 5096110).

Schmatz teaches a system for soldering a part comprising a means for replacing air around an unsoldered part with inert gas, means for replacing the gas with vacuum and means for backfilling the vacuum with gas and air which can be used for cooling. The gases are presumably the same (figure 1 and col 3 line 43 – col 4 line 8). The heating means can be heated to a plurality of different temperatures in a controlled manner (col 6 lines 20-63).

6. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishikawa et al. (USPN 6227436 B1).

Nishikawa teaches a system for soldering a part comprising a conveyor for moving the part, means for replacing air around an unsoldered part with inert gas (col 6 lines 15-45), means for replacing the gas with vacuum, means for replacing the vacuum with gas which can be used for cooling (col 8 lines 58-67), multiple lock chambers (col 8 lines 28-67, a vacuum reflow chamber and a pump for injection and removal of gas (figures 7 and 8, col 3 lines 44-65, col 9 lines 13 – col 9 line 24 and col 17 line 43 – col 18 line 32). The gases are presumably the same. As the soldering is performed in a vacuum, the apparatus is capable of forming solder bumps with very low void volumes. Although the reference teaches soldering of a circuit board, it is noted that the object soldered does not further limit the apparatus.

7. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Mitten et al. (US 2003/0160088 A1).

Mitten teaches a system for soldering a part comprising a conveyor for moving the part, means for replacing air around an unsoldered part with inert gas, means for replacing the gas with vacuum, means for replacing the vacuum with gas which can be used for cooling, multiple lock chambers, a vacuum reflow chamber and a pump for injection and removal of gas (figures 1 and 2, paragraphs 22-28, 31-35, 45 and 55-57). The gases are presumably the same. As the soldering is performed in a vacuum, the apparatus is capable of forming solder bumps with very low void volumes. Although the reference teaches soldering of a circuit board, it is noted that the object soldered does not further limit the apparatus.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 4, 9 and 11-20 have been considered but are moot in view of the new ground(s) of rejection.

9. In response to applicant's argument that Schmatz does not disclose using a vacuum or inert gas as claimed, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in

order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Schmatz teaches a vacuum system comprising a pump capable of removing air and a backfill gas system capable of replacing air (col 6 lines 31-65). This removal of air is capable of reducing void formation. It is noted that the claims refer to a system not a method or process.

According to Merriam-Webster's Collegiate dictionary, the term system has 5 definitions with divisions within each definition wherein one definition is an apparatus (interdependent group of items forming a unified whole) and one definition which is an established procedure that has a synonym method. As at least these two definitions apply, the rejection stands until further clarification is made.

According to Merriam-Webster's Collegiate Thesaurus, the term system is synonymous with an apparatus (organized, integrated whole), an arrangement or setup, pattern or method.

Therefore the 102 rejection of claims 1-3, 5-8 and 10 as anticipated by Schmatz stands.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson  
Primary Examiner  
Art Unit 1725

*LE*  
*3/14/02*

LRE